

CM 181 1. A method consisting of the steps of:

PI a. inputting a frame of a two-dimensional image into a computer;

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PI b. specifying at least two individual image elements in the two-dimensional image;

a PI c. ~~separating~~ ^{separating} the two-dimensional image into said image elements;

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PI d. specifying three-dimensional information for at least one of said image elements;

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PI e. processing at least one of said image elements to incorporate said three-dimensional information and create at least one processed image element;

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PI f. generating at least one processed image frame comprising at least one of said processed image elements.

2. A method as in claim 1 wherein said step f results in the generation of a left and right pair of processed image frames.

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3. A method as in claim 2 comprising the additional step of:

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PI g. combining said left and right image pair into a single processed image.

4. A method as in claim 2 comprising the additional step of:

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- 1 g. encoding said left and right processed image pair for viewing, by coloring each of said pair different colors.

- 5 5. A method as in claim 2 comprising the additional step of:

- PI g. encoding said left and right processed image pair for viewing, by passing each of said pair through mutually perpendicularly polarized filters.

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6. A method as in claim 2 comprising the additional step of:

- g. encoding said left and right processed image pair for viewing, by displaying each of said pair *alternately* on a video display.

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- As method as in claim 1, wherein said step f results in a processed image frame such that, when viewed through glasses with one dark and one light lens, 3-dimensional effects are perceived.

- 25 8. A method as in claim 1 comprising the additional step of:

- PI g. recording said processed image frame.

- 30 9. A method as in claim 7 comprising the additional step of:

- PI g. recording said processed image frame.

- 35 10. A method as in claim 1 wherein said steps are applied to

1 successive frames in a motion picture sequence.

11. A method as in claim 2 wherein said steps are applied to
5 successive frames in a motion picture sequence.

Sub 10 *A2* *NP* *AK* { 12. A method as in claim 7 wherein said steps are applied to
successive frames in a motion picture sequence.

13. A product produced by the method described in claim 10.

15 14. A product produced by the method described in claim 11.

Sub 20 *A33* *NP* *AK* { 15. A product produced by the method described in claim 12.

16. A method as in claim 1 wherein at least one of said
processed image elements produced in step e is a shadow
element.

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17. A method as in claim 1 wherein at least one of said image
elements in step e is processed to include additional two
dimensional image information not contained in the original
unprocessed two-dimensional image.

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18. A method as in claim 17 wherein said additional two
dimensional image information is derived from another image.

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1 19. A method as in claim 1 wherein said processed image elements
in step f are combined with at least one additional ^B3-D
image element not derived from the source image to create
said processed image frame.

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20. A method as in claim 19 wherein said additional ^B3-D image
element is derived from a ^B3-D photograph.

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21. A method as in claim 19 wherein said additional ^B3-D image
element is derived from a computer generated ^B3-D image.

15 22. A method as in claim 1 wherein said three-dimensional
information for at least one of said image elements in step
d is specified only at certain points and is interpolatively
derived for other points on said image element.

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23. A method as in claim 10 wherein said three-dimensional
information for at least one of said image elements in step
d is specified only for certain frames and is temporally
interpolated for frames between said certain frames.

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24. A method as in claim 10 wherein said specification of at
least one of said image elements in step b is specified only
for certain frames and is temporally interpolated for frames
between said certain frames.

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25. A method as in claim 1 wherein random noise is added to the
three-dimensional information specified in step d.

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26. A method as in claim 1 wherein at least some of said three-dimensional information specified in step d is derived from the measurement of at least one aspect of an image element.

A7-A8

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- A method as in claim 10 wherein at least some of said three-dimensional information specified in step d is derived from the measurement of the change of at least one aspect of an image element in successive frames.

A9-A10

claims 30-31

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- A method as in claim 1 wherein said two-dimensional image frame is a black and white image frame, said image elements are black and white image elements, and said processing includes the process of adding color to at least one of said black and white image elements.

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- A method as in claim 28 wherein said steps are applied to successive frames in a motion picture sequence.

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- A product produced by the method of claim 29.

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- An apparatus for converting a two-dimensional image frame into a three-dimensional image frame comprising, in combination:

- a. a means for scanning said two-dimensional image frame into a computer;
- b. a means for specifying individual image elements in said frame;

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c. a means for ~~separating~~ ^{separating} said frame into said individual elements;

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d. a means for specifying three-dimensional information for each of said individual image elements;

e. a means for processing said individual image elements to create processed image elements;

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f. a means for creating said three-dimensional image frame comprising at least one of said processed image elements;

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g. a means for outputting said three-dimensional image frame.

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36. An apparatus for converting a two-dimensional image sequence into a three-dimensional image sequence and producing a three-dimensional image recording comprising, in combination:

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PI a. a means for scanning said sequence into a computer;

PI b. a means for specifying individual image elements in said sequence;

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h PI c. a means for ~~separating~~ ^{separating} said sequence into said individual image elements;

PI d. a means for specifying three-dimensional information for said individual image elements;

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PI e. a means for processing said individual image elements to

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create processed image elements;

P1

f. a means for combining said processed image elements into a processed image sequence;

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P1

g. a means for outputting said three-dimensional image sequence;

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h. a means for recording said three-dimensional image sequence.

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A method, consisting of the steps of:

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a. inputting frames of a two-dimensional image sequence into a computer;

b. specifying at least two individual image elements in the two-dimensional image sequence;

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c. ~~separating~~ ^{separating} the two-dimensional images into said image elements;

d. specifying three-dimensional information for at least one of said image elements;

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e. processing at least one of said image elements to incorporate said three-dimensional information and create at least one processed image elements;

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f. generating a sequence of processed image frames comprising at least one of said processed image elements said generation to be of such a nature so as to exhibit three-dimensional depth characteristics when viewed through glasses with one light and one dark lens.

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4. A method as in claim 35 comprising the additional step:

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PI

g. transmission of said three-dimensional image sequence.

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A method as in claim 33 comprising the additional step:

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g. transmission of said three-dimensional image sequence.

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A method as in claim 35 wherein said two-dimensional image sequence is a black and white image sequence; said image elements are black and white image elements, and said processing includes the process of adding color to at least one of said black and white image elements.

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A product produced by the method of claim 36.

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A method consisting of the steps of:

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PI

a. inputting frames of a two-dimensional image sequence into a computer, each of said frames consisting of at least two individual image elements;

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PI

b. specifying three-dimensional information for at least one of said image elements;

PI

c. processing at least one of said image elements to incorporate said three-dimensional information and create at least one processed image element;

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- 1 *P1* d. generating a sequence of processed image frames comprising at least one of said processed image elements.

- 5 *43*
39. A method as in claim *42* wherein said individual image elements in step a are derived from *sub-components* of an animated film.

- 10 *44*
40. A product produced by the method described in claim *43*.

- Sub A 15*
41. A method according to claim 1 and substantially as described herein with reference to the accompanying figures.

- Sub A 20*
42. Apparatus for carrying out the method of claim 1, substantially as described herein with reference to the accompanying figures.

- Sub A 30*
43. A method according to claim 10 and substantially as described herein with reference to the accompanying figures.

- Sub A 35*
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44. Apparatus for carrying out the method of claim 10, substantially as described herein with reference to the accompanying figures.
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